CLAIMS

What is claimed is:

1.   A method of switching fabric port mapping comprising:

broadcasting fabric specific broadcast control cells;

transmitting the broadcast control cells to each port on each of the shelves; and

fowarding the replicated broadcast control cells to all shelves attached to the

switching fabric, wherein the broadcasts contain the current switching port mappings.

2.   The method of claim 1, wherein the said mapping is accomplished without the

mapping of physical fabric ports.

3.   The method of claim 1, wherein the presence of a line card on a given fabric

logical port is propagated to all other line cards in the system.

4.   The method of claim 1, wherein the tables are updated by a fabric control cell

mechanism.

5.   The method of claim 4, wherein the fabric control cell mechanism immediately

broadcasts the change in logical to physical port mappings upon the failure of an active

line card.

6.   The method of claim 5, wherein the fabric control cells periodically broadcast

current physical to logical port mappings.

7. The method of claim 6, wherein there are instances of multiple fabric control cell broadcasts ongoing.

8. The method of claim 7, wherein the broadcasts are controlled by shelf managers.

9. The method of claim 8, wherein the shelf managers periodically send out broadcast cells for all line card slots.

10. The method of claim 6, wherein the periodic broadcasts are made even when there is no card in a given slot.

11. A switching fabric port mapping apparatus comprising:

    means for mapping logical fabric ports to line ingress queues; and

    means for broadcasting the mappings.

12. The apparatus of claim 11, wherein an output queue is associated with a logical destination port.

13. The apparatus of claim 11, wherein the logical fabric ports are globally managed.

14. The apparatus of claim 11, wherein logical to physical fabric port mapping is managed locally.

15. A switching fabric port mapping apparatus comprising:

circuitry to map logical fabric ports to line ingress queues; and

circuitry to broadcast the mappings.

16. The apparatus of claim 15, wherein logical fabric ports are globally managed.

17. The apparatus of claim 15, wherein logical to physical port mapping is managed locally.

18. The apparatus of claim 15, wherein there are instances of multiple control cell broadcasts ongoing.

19. A machine-readable medium that provides instructions, which when executed by a machine causes the machine to perform operations comprising:

mapping logical ports to line ingress queues; and

facilitating the said mapping locally.

20. A switching fabric port mapping system comprising:

a multi-shelf switching fabric:

source line cards;

destination line cards; and

a broadcast control mechanism which facilitates port mapping;

wherein the said mapping is accomplished without the mapping of physical fabric ports.

21.   The system of claim 20, wherein a redirecting of traffic is accomplished using a distributed broadcast mechanism.

22.   The system of claim 20, wherein the mapping is executed in a multi-shelf switching environment.

23.   The system of claim 20, wherein mapping tables are updated by a fabric control cell mechanism.

24.   A method of switching fabric port mapping comprising:

broadcasting fabric specific broadcast control cells;

transmitting the broadcast control cells to each port on each of the shelves;

terminating the broadcast control cells with a shelf processor;

updating a port mapping table on each shelf; and

mapping ingress queues to logical fabric ports instead of physical fabric ports based on updated port mapping tables;

wherein a shelf's logical to physical fabric port mapping is managed locally and it's mapping table updates are managed globally.

25. The method of claim 24, wherein the terminating is done by a processor located in a line card.

26. The method of claim 24, wherein a fabric control mechanism supports either 1 for 1 sparing or 1 for N sparing.